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Data Set Analysis Process

Grouping data by 'work_year', 'company', 'location', and 'job_category' and creating scatterplots helped us understand what trends there were across different datasets. We changed our x and y axes.

Location Popularity: Enabled us to know where certain datasets were more common.

Career Insights: Allowed us to see the growth in various job titles and categories, therefore, providing a guide with career decisions.

Popular Data Jobs: Helped identify the different data jobs that we are to discuss.

Specific job titles that stood out: Creating a hierarchy table generally by work setting, company size, and experience level.

Filtering: Narrowing down to full-time Data Analyst positions in the U.S.

Aggregating: Calculating average salaries by work setting, company size, and experience level.

Transforming: Adjusting salary figures for readability.

Combining Categories: Merging company size and work setting for simplified analysis.

Visualizing: Creating a hierarchy to identify how different levels affect salaries.

Interpreting: Looking for insights, especially the significant impact of experience level on salaries.

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Challenges Encountered

- Trying to figure out what type of graph would best represent the data.
- Not having enough data in 2020 and 2021.
- There were changes in prevailing job titles as the years progressed.
- We couldn't plot any global data due to a large majority of the data jobs provided were within the United States.

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How could we have Solved the Challenges

- Research what types of graphs would be compatible with the data that we were trying to visualize and how the graphs can be used to show the relationship between values.
- In retrospect, it might have been beneficial to consider alternative datasets to enrich our understanding of the year 2020 and 2021. While our dataset for 2022 and 2023 showed a comprehensive representation of roles, the earlier years suffered from a scarcity of data. This could be attributed to either an inherent lack of available information or possibly a more pronounced evolution in data science methodologies post the COVID-19 pandemic.
- Since a majority of the job titles were located in the United States, we decided to focus on our analysis on the jobs located there.

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Conclusions

- Based on our analysis, we found out that Data Engineer was the top job title across the four years.
- Data Scientist jobs had the highest amount of salaries among the top 10 job titles (having 1540 salaries) with Data Engineering having the second highest (having 1234 salaries).
- United States has the most number of jobs in the data field when compared to other countries globally.
- Data Analyst jobs had the most amount of entry-level employees (having 119 entry-levels).
- Based on the analysis, we can conclude that there is a substantial growth in data field job market when observing the trend (ie. Data Scientist had 19 positions in 2020 and there is 2022 there were 1538 positions).
- The trend also shows that there's an increase in salary (ie. Machine Learning job's engineer in 2020 made \$145k, and then in 2022 they made \$205k).

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Data Source

This dataset, titled "Data and Salaries in Data Science," is sourced from <https://www.kaggle.com/datasets/robertodominguez/data-and-salaries-in-data-science>. It comprises data from both internal survey submissions and publicly disclosed job salaries.

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Key insights and Recommendations



The more experience you have, the more money you usually make. This is especially true for jobs in Machine Learning and AI, where pay can go from \$93,000 for beginners to \$207,000 for top positions.

The best-paying jobs in data are in Machine Learning and AI, Data Science and Research, Data Engineering, and Leadership roles. Data Analyst jobs pay well, but there are other data jobs that pay more.

Jobs in BI (Business Intelligence) and Visualization pay a bit more than Data Analysis jobs, even though they often require similar skills and job duties.

If you're starting out as a Data Analyst, the best countries for salary are the United States (\$77,000), the United Kingdom (\$58,000), and Germany (\$57,000). But remember, this doesn't consider how expensive it is to live in these countries.

Whether you work in an office or from home doesn't really change how much you get paid. But, not many people in the study work in a mix of both, so it's hard to say for sure.



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